PWSNO 1400019
EAST SHOSHONE COUNTY WATER DISTRICT-WALLACE
SOURCE WATER ASSESSMENT REPORT

November 9, 2000

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the watershed characteristics.

This report, *Source Water Assessment for East Shoshone County Water District-Wallace*, describes the public drinking water system, the zone boundary of water contribution, and the associated potential contaminant sources located within these boundary. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The East Shoshone County Water District-Wallace drinking water system consists of four surface water intakes in the Placer Creek drainage. The system received a ranking of low susceptibility to contamination from volatile organic chemicals, synthetic organic chemicals, inorganic chemicals and microbials. Historically, water quality in Placer Creek is good. Radionuclides below the Maximum Contaminant Level (MCL) have been detected since 1993. Synthetic organic chemicals and volatile organic chemicals have never been found in the water. Routine water testing in 1979 disclosed the presence of mercury at a concentration of 0.0008 mg/l. Samples taken in August 1988 had cadmium at concentrations of 0.0009 mg/l and 0.0023 mg/l detected in them. These concentrations of mercury and cadmium are well below the MCLs. Neither cadmium nor mercury has been detected in the water since the original samples were tested.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the East Shoshone County Water District-Wallace drinking water system, source water protection activities should focus on preventing sediment flow into Placer Creek from roads, logging or mining. Due to the fairly short time associated with the movement of surface waters, source water protection activities should be aimed at both short-term and long-term management strategies to counter any future contamination threats. Source water protection activities should be coordinated with the appropriate public land management agencies and private landowners in the Placer Creek watershed. The water district needs especially to be working with agencies responsible for road maintenance on the Moon Pass road need to ensure that any herbicides used for noxious weed control do not enter the water supply.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact your regional IDEQ office or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR EAST SHOSHONE COUNTY WATER DISTRICT-WALLACE, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area, map showing the entire watershed contributing to the delineated area, map showing the twenty-four (24) hour emergency response delineation, and the inventory of significant potential sources of contamination identified within the delineated area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is attached.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the intakes and watershed characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (IDEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. IDEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

East Shoshone County Water District-Wallace, Idaho serves a community of approximately 2040 people, located in Wallace, the county seat of Shoshone County. (Figure 1). Public drinking water for East Shoshone County Water District-Wallace is drawn from four surface water intakes in the Placer Creek watershed. Water from the intakes is piped to a central plant where it passed through a membrane filtration process and is chlorinated before distribution.

The primary water quality issue currently facing East Shoshone County Water District-Wallace is that of preventing contamination associated with land disturbances in the watershed. In recent years radionuclides have been detected in the water, but below the MCL. Mines in the watershed were prospected for gold silver and lead, but because of their location relative to the water intakes are considered low risk potential sources of inorganic chemical contaminants.

Defining the Zones of Contribution--Delineation

To protect surface water systems from potential contaminants, the EPA required that the entire drainage basin be delineated upstream from the intake to the hydrologic boundary of the drainage basin. (U.S. EPA, 1997b). The EPA recognized that an intake on a large water body could have an extensive drainage basin. Therefore, the EPA recommended that large drainage basins be segmented into smaller areas for the purpose of implementing a cost-effective potential contaminant inventory and susceptibility analysis. The delineation process established the physical area around an intake that became the focal point of the assessment. Because the watershed for the East Shoshone County Water District-Wallace water system is relatively small, the delineation was not subdivided (Figure 2). The delineation extends to the watershed boundaries as they appear on a 7.5-minute USGS topographic map.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of surface water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by IDEQ and from available databases.

The dominant land use in the Placer Creek Watershed is undeveloped, forested land. The watershed, located south of Wallace, contains eight inactive mines, and is crossed by unpaved roads leading to Moon Pass and the Slate Creek Saddle. Land in the drainage both privately and publicly owned. The drainage encompasses nearly 9000 acres.

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are observed. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be

interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination. These involve educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply intake.

Contaminant Source Inventory Process

IDEQ staff conducted a contaminant inventory of the study area. The first phase involved identifying and documenting potential contaminant sources within the East Shoshone County Water District-Wallace Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by IDEQ. Carl Scheel of the East Shoshone County Water District reviewed the contaminant inventory and accompanying base map.

A total of eight potential contaminant sites, all inactive mines, are located within the delineated source water area. The mines are all more than 1000 feet from the Placer Creek intakes (Figure 2), and are considered to be low risk sources of potential contaminants.

Section 3. Susceptibility Analyses

Significant potential sources of contamination were ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity and construction of the intake, land use characteristic, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each intake is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Intake Construction

The construction of the East Shoshone County Water District-Wallace public water system intakes directly affects their ability to protect the water from contaminants. The East Shoshone County Water District-Wallace drinking water system consists of four intakes that provides surface water for domestic and industrial uses. Susceptibility to contamination, based on intake construction details reported in IDEQ sanitary surveys, is low. Infiltration galleries provide some filtration of the creek water before it enters the treatment plant.

Potential Contaminant Source and Land Use

The Placer Creek intakes rank in the low class for susceptibility to contamination volatile organic chemicals, synthetic organic chemicals and for inorganic chemicals. The eight abandoned mines in the watershed are low risk potential contaminant sites.

As indicated in Table 1 the intake shows a low susceptibility to microbial contamination, which is generally related to storm water runoff, the presence of septic systems, or agricultural grazing in the surface water protection zone.

Table 1. Summary of City of East Shoshone County Water District-Wallace Susceptibility Evaluation

Intake	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
	IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Placer Creek	L	L	L	L	L	L	L	L	L

H = High Susceptibility, M = Moderate Susceptibility, Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
H* - Indicates source automatically scored as high susceptibility due to presence of either a VOC, SOC or an IOC above the Maximum Contaminant Level in the finished drinking water or the presence of significant contaminant sources within 1000 feet of an intake and within the delineated area.

Susceptibility Summary

The East Shoshone County Water District-Wallace drinking water source is most threatened by sediment-laden runoff from disturbed land in the watershed.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For East Shoshone County Water District-Wallace, source water protection activities should focus on implementation of best management practices aimed at reducing sediment runoff from logging, mining, road building or maintenance, and recreational activity in the drainage. Herbicides used for noxious weed control along maintained roads should be monitored. Since the land in the drainage is not owned by East Shoshone County Water District, partnerships with private landowners, state and local agencies to regulate land use in the watershed should be established. Due to the relatively short time involved with the movement of surface water, source water protection activities should be aimed at short-term management strategies, and at the same time need to address long-term impacts from mining, logging and other land disturbances in the watershed.

Assistance

Public water suppliers and others may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

Coeur d'Alene Regional IDEQ Office	(208) 769-1422
State IDEQ Office	(208) 373-0502

Website: http://www.deq.state.id.us

References Cited

Idaho Department of Agriculture, 1998. Unpublished Data.

Idaho Division of Environmental Quality, Unpublished Data

EPA (U.S. Environmental Protection Agency), 1997, State Methods for Delineating Source Water Protection Areas for Surface Water Supplied Sources of Drinking Water, EPA 816-R-97-008, 40p.

U.S. Government Printing Office, 1995, Code of Federal Regulations, 40 CFR 112, Appendix C-III, Calculation of the Planning Distance

Rules Pertaining to the Idaho Forest Practices Act Title 38, Chapter 13, Idaho Code, July 1996, Idaho Department of Lands, Boise, Idaho

Attachment A

East Shoshone County Water District-Wallace Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined from the addition of the Potential Contaminant Source/Land Use Score and Source Construction Score.

Final Susceptibility Scoring:

0 - 7 Low Susceptibility

8 - 15 Moderate Susceptibility

> 16 High Susceptibility

Surface Water Susceptibility

Report

Public Water System Name : **EAST SHOSHONE COUNTY WATER DIST WALLACE**

Public Water System Number : **1400019**

Source: **PLACER CREEK**

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1. System Construction		SCORE
Intake structure properly constructed	YES	0
Infiltration gallery or well under the direct influence of Surface Water	YES	0
Total System Construction Score		**0**

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials	present within a 1-mile radius and upstream	0	0	0	0
Agricultural lands within 500 feet	NO				
		0	0	0	0
Three or more contaminant sources	YES	1	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
Total Potential Contaminant Source / Land Use Score		**2**	**1**	**1**	**1**
3. Final Susceptibility Source Score		**2**	**1**	**1**	**1**
4. Final Source Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant

The source water has no special susceptibility